The Invention Claimed Is:

1. A method of forming a portion of an integrated circuit comprising:

providing a silicon carbide base;

epitaxially growing a dielectric film on the silicon carbide base; and

forming a CMOS device on the silicon carbide base and epitaxially grown dielectric film, wherein the CMOS device includes a channel region and a gate dielectric, the channel region is formed in the silicon carbide base and the gate dielectric is formed by the epitaxially grown dielectric film.

2. A method as defined in claim 1 wherein:

the step of epitaxially growing the dielectric film further comprises forming a crystalline carbon-containing film on the silicon carbide base.

3. A method as defined in claim 1 wherein:

the step of epitaxially growing the dielectric film further comprises forming a crystalline carbon film on the silicon carbide base.

4. A method as defined in claim 1 further comprising:

providing a silicon substrate; and

the step of providing the silicon carbide base further comprises epitaxially growing the silicon carbide base on the silicon substrate.

5. A method as defined in claim 1 wherein:

the step of forming the CMOS device further comprises forming a silicon carbide region on the epitaxially grown dielectric film, wherein the CMOS device further includes a gate electrode formed by the silicon carbide region.

6. A method as defined in claim 5 wherein:

the step of forming the silicon carbide region on the epitaxially grown dielectric film further comprises epitaxially growing a silicon carbide layer on the epitaxially grown dielectric film.

7. A method as defined in claim 5 wherein:

the step of forming the silicon carbide region on the epitaxially grown

dielectric film further comprises depositing a silicon carbide layer on the epitaxially grown dielectric film.

8. A method of forming a CMOS device having a channel region and a gate dielectric region in an integrated circuit comprising:

providing a semiconductor substrate;

epitaxially growing a strained silicon carbide film on the semiconductor substrate;

epitaxially growing a crystalline carbon-containing film on the silicon carbide film;

forming the gate dielectric region of the CMOS device in the epitaxially grown crystalline carbon-containing film; and

forming the channel region of the CMOS device in the epitaxially grown strained silicon carbide film.

9. A method as defined in claim 8 wherein the CMOS device further has a gate electrode region, further comprising:

epitaxially growing a silicon carbide film on the crystalline carbon-containing film of the gate dielectric region; and

forming the gate electrode region of the CMOS device in the silicon carbide film epitaxially grown on the crystalline carbon-containing film of the gate dielectric region.

10. An integrated circuit comprising:

a silicon carbide base;

a dielectric film epitaxially grown on the silicon carbide base; and

a CMOS device including a channel region formed in the silicon carbide base and a gate dielectric formed by the epitaxially grown dielectric film.

11. An integrated circuit as defined in claim 10 wherein:

the epitaxially grown dielectric film includes crystalline carbon.

12. An integrated circuit as defined in claim 10 wherein:
the epitaxially grown dielectric film has a dielectric constant larger than 4.5.

13. An integrated circuit as defined in claim 10 further comprising:
a silicon substrate;
wherein the silicon carbide base is formed on the silicon substrate.

14. An integrated circuit as defined in claim 13 wherein:
the silicon carbide base is epitaxially grown on the silicon substrate.

15. An integrated circuit as defined in claim 14 wherein:
the epitaxially grown silicon carbide base is a strained silicon carbide film.

16. An integrated circuit as defined in claim 10 wherein:
the silicon carbide base comprises a silicon carbide substrate.

17. An integrated circuit as defined in claim 10 further comprising:
a silicon carbide region formed on the epitaxially grown dielectric film;
wherein the CMOS device further includes a gate electrode formed by the silicon carbide region.

18. An integrated circuit as defined in claim 17 wherein:
the silicon carbide region is epitaxially grown on the epitaxially grown dielectric film.

19. An integrated circuit as defined in claim 17 wherein:
the silicon carbide region is deposited on the epitaxially grown dielectric film.